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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

On re Application of Bosma-et al

Serial No.: 09/183,380

Filed: 30-Oct-1998

Title: WIRE-BOUND TELECOMMUNICATION DEVICE AND A CIRCUIT FOR  
USE IN SUCH A DEVICE

Atty. Docket No.: PHN 16-611

Group Art Unit: 2644

Examiner: Tran, Con P

APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. § 1.193

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Commissioner for Patents  
Alexandria, VA 22313-1450

OCT 30 2003

Technology Center 2600

Sir:

This is an appeal from the decision of the Examiner dated 5 June 2003, finally  
rejecting claims 1-10 of the subject application.

I. REAL PARTY IN INTEREST

The above-identified application is assigned, in its entirety, to U.S. Philips  
Corporation, a company organized under the laws of the State of Delaware.

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any co-pending appeal or interference which will  
directly affect or be directly affected by or have any bearing on the Board's decision in  
the pending appeal.

III. STATUS OF CLAIMS

Claims 1-10 are pending in the application. Claims 1-10 stand rejected by the  
Examiner under 35 U.S.C. 103(a).

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the final rejection in the Office Action  
dated 5 June 2003.

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## **V. SUMMARY OF THE INVENTION**

The invention comprises a wired telecommunications device, such as a telephone or facsimile device, with circuitry for detecting signal energy on the subscriber line to which the device is attached.

Conventionally, telecommunications devices include filters for detecting energy on the subscriber line within a particular frequency band, typically corresponding to signaling "tones" (Applicants' page 1, lines 8-13). Each filter consumes resources, such as integrated-circuit area and power, and often precludes the use of the same device in telecommunications environments with differing standards (Applicants' page 3, lines 9-17).

The aforementioned circuitry for detecting signal energy in this invention is configured to measure the signal energy on the subscriber line in the time-domain, rather than in the frequency-domain, thereby avoiding the need for frequency-filter circuits (Applicants' page 2, lines 20-28). The entirety of the signal energy on the subscriber line is measured for a predetermined time interval. An analysis of a sequence of such timed samples can provide information regarding a variety of characteristics of the signals on the line, including, but not limited to, the detection of particular tones on the subscriber line, as well as the detection of power drops, load variations, and so on (Applicants' page 4, lines 5-11). Such analysis can easily be performed in software, or via relatively simple circuitry, thereby allowing for the design of a device that is compatible with multiple telecommunications standards (Applicants' page 3, line 30 through page 4, line 3). The determination of other characteristics of the signals on the subscriber line, based on the time-sampling of the entirety of the signal energy on the subscriber line, is presented at Applicants' page 4, lines 9-30.

## **VI. ISSUES**

Are claims 1-7 patentable under 35 U.S.C. 103(a) over Hoopes (USP 6,058,171) and Abe et al. (USP 5,781,588, hereinafter Abe)?

Are claims 8 and 9 patentable under 35 U.S.C. 103(a) over Hoopes, Abe, and Rosen et al. (USP 5,864,607, hereinafter Rosen)?

Is claim 10 patentable under 35 U.S.C. 103(a) over Hoopes and Abe?

## VII. GROUPING OF CLAIMS

Claims 1-9 stand or fall together; claim 10 stands or falls alone.

## VIII. ARGUMENT

Claims 1-9 stand or fall together, separately from claim 10, because independent claims 1 and 10 form patentably distinct inventions. Claim 1, upon which claims 2-9 depend, claims a telecommunications device, whereas claim 10 claims a signal detecting circuit for use in a telecommunications device.

*Are claims 1-7 patentable under 35 U.S.C. 103(a) over  
Hoopes and Abe, and  
claims 8 and 9 patentable under 35 U.S.C. 103(a) over  
Hoopes, Abe, and Rosen?*

Claim 1, upon which claims 2-9 depend, specifically recites a telecommunications device comprising "a signal energy detecting arrangement that is configured to determine a time-domain signal representing ***signal energy of a substantial entirety of the signal on the subscriber line*** in a predetermined time interval."

The referenced final Office action acknowledges that Hoopes does not disclose a signal energy detecting arrangement that determines the signal energy on the subscriber line in a predetermined time interval, and relies upon Abe for this teaching.

Abe teaches a frequency-shift-key (FSK) receiver that includes a frequency converter that convert an RF-band FSK signal to a baseband signal, from which a bit-detector determines a time-domain bit value.

The final Office action references Abe's device 2301 (in FIG. 34) as corresponding to the Applicants' claimed signal energy detecting arrangement that determines a time-domain signal representing the signal energy of the entirety of the signal on the subscriber line. The Applicants traversed this interpretation of Abe in the Applicants' response to the final Office action, filed 18 July 2003, noting that the input to Abe's device 2301 is ***not the signal energy of the entirety of the signal*** on the subscriber line, and thus the device 2301 cannot be said to be a device that determines a signal representing this energy. The input to Abe's device 2301 is the output of Abe's device

2101. In the referenced response to the final Office action, the Applicants quoted Abe's description of device 2101: "The demodulator 2101 outputs a signal having a voltage that is proportional to the instantaneous *frequency* of the RF multi-valued FSK signal" (Abe, column 32, lines 35-37). That is, as Abe describes the function of the demodulator 2101, the higher the instantaneous frequency, the higher the input voltage to the device 2301; the lower the instantaneous frequency, the lower the input voltage to the device 2301. The demodulator 2101 is an example embodiment of Abe's aforementioned frequency converter that converts an RF-band FSK signal to a baseband signal, and the device 2301 is an example embodiment of a component of Abe's aforementioned bit-detector that determines a bit-value from this baseband signal.

The output of Abe's demodulator 2101 is a measure of a *frequency* of the signal, and the device 2301 detects a peak of this measure of *frequency* of the signal in a given time interval. As is well known in the art, a measure of the frequency of a signal is independent of the total energy in the signal. Two signals having different energy content but the same instantaneous frequency will, as defined by Abe, and as is common in the art of FM and FSK detectors, produce identical outputs from the demodulator 2101. In like manner, a first signal having a *lower energy* but higher frequency than a second signal will produce a *higher output* from the demodulator 2101 than the second signal.

In the subsequent Advisory Action of 4 August 2003, the Examiner notes that the output of the demodulator 2101 is "a signal having a voltage", and that the device 2301 measures the energy in this voltage over a predetermined time period. The Applicants concur with this generalized definition, but respectfully note that "a signal having a *voltage*" does not correspond to a signal having a *voltage representing signal energy* of a substantial entirety of a received signal as specifically claimed by the Applicants. Abe teaches a signal having a *voltage representing instantaneous frequency* of a received signal.

Because measuring signal energy is substantially different from measuring instantaneous frequency, and the Applicants claim measuring signal energy whereas Abe teaches measuring signal frequency, the Applicants respectfully maintain that Abe neither teaches nor suggests the Applicants' claimed signal energy detection arrangement, either individually, or in combination with Hoopes or Rosen.

**Is claim 10 patentable under 35 U.S.C. 103(a) over  
Hoopes and Abe?**

Claim 10 recites an energy detection circuit for use in a telecommunications device, wherein the circuit determines the signal energy of the entirety of a signal on a subscriber line during a predetermined time interval.

As noted above, the final Office action acknowledges that Hoopes does not teach an energy detection circuit that determines the signal energy of the entirety of a signal on a subscriber line during a predetermined time interval, and relies upon Abe for this teaching.

As also noted above, Abe teaches the detection of the frequency of a signal, and does not teach or suggest determining the energy content of the signal. As further noted above, the determination of the frequency of a signal and the determination of the energy of an entirety of the signal are substantially different and independent determinations. A signal's energy is not determinative of its frequency, and a signal's frequency is not determinative of its energy.

**IX. CONCLUSIONS**

Because neither Hoopes nor Abe, individually or collectively, teaches or suggests determining a signal representing the energy of a substantial entirety of the signal on a subscriber line, as specifically claimed in each of the Applicants' independent claims 1 and 10, the Applicant respectfully requests that the Examiner's rejection of claims 1-10 under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,

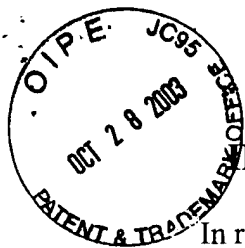


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APPENDIX  
CLAIMS ON APPEAL

1. A wire-bound telecommunication device comprising:
  - terminals for coupling the device to a subscriber line of a telecommunication network,
  - a transmission circuit, and
  - a signal energy detecting arrangement that is configured to determine a time-domain signal representing signal energy of a substantial entirety of the signal on the subscriber line in a predetermined time interval.
2. A wire-bound telecommunication device as claimed in claim 1, wherein the signal energy is determined cyclically.
3. A wire-bound telecommunication device as claimed in claim 1, wherein the signal energy determination is initiated by a trigger pulse.
4. A wire-bound telecommunication device as claimed in claim 1, wherein
  - the telecommunication device operates according to a given signal protocol,
  - the signal energy being determined during at least one predetermined expected signal interval.
5. A wire-bound telecommunication device as claimed in claim 4, wherein
  - the signal protocol is a caller identification signal protocol and
  - the expected signal interval comprises a tone alerting signal.
6. A wire-bound telecommunication device as claimed in claim 5, wherein
  - the signal energy determination is continued until a further expected signal interval comprising a caller identification signal.

7. A wire-bound telecommunication device as claimed in claim 6, wherein  
a caller identification signal detector is initiated by an initiating pulse which  
is generated a predetermined time after the detection of the tone alerting.
8. A wire-bound telecommunication device as claimed in claim 7, wherein  
the initiation pulse controls switching of an impedance parallel to the  
subscriber line.
9. A wire-bound telecommunication device as claimed in claim 1, wherein  
the energy determination is used for monitoring subscriber line load variations.
10. A circuit for use in a wire-bound telecommunication device comprising  
terminals for coupling the device to a subscriber line of a telecommunication  
network and a transmission circuit,  
the circuit comprising  
a signal energy detecting arrangement that is configured to determine  
signal energy of a substantial entirety of the signal on the subscriber line in a  
predetermined time interval.



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Alexandria, VA 22313-1450

Sir:

Enclosed is an original plus two copies of an Appeal Brief in the above-identified application.

☒ A credit card authorization in the amount of **\$330** is enclosed.

☐ The Commissioner has already been authorized to charge fees in this application to Deposit Account .

☐ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account \_\_\_\_\_. Enclosed is a copy of this sheet.

Respectfully submitted,

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CERTIFICATE OF MAILING

It is hereby certified that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to:  
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On 22 October 2003

By